

THE CHEMICAL COMPOSITION OF BERRY WAX.

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Berry wax forms a rough coating on the surface of the berries of *Myrica cordifolia*, a common plant on the sea-coast at the Cape. The berries are collected at the beginning of winter and boiled with water, when the melted wax rises to the surface and solidifies on cooling. Some tons in weight are produced annually and find a ready sale in South Africa, being used for waxing floors.

By warming the crude product a little above 100° C., some steam hisses off, and by filtering, using a hot-water funnel, mechanical impurities such as dust and leaves are separated. The substance thus purified has still a greenish-yellow tint, no doubt due to chlorophyll, and gives off a faint but characteristic herb-like odour.

Berry wax is in reality a vegetable fat and not a true wax. Lewkowitsch* describes the "myrtle wax" obtained from various species of *Myrica*, mentioning the species *cordifolia* among others, and implies that they all yield the same substance which, he states, "consists of the glycerides of stearic, palmitic, and myristic acids, and a small quantity of oleic acid." Excepting in regard to the presence of oleic acid, this statement holds good for berry wax.

I have determined certain physical and chemical constants of berry wax, and find that my numbers agree fairly well with those quoted by Lewkowitsch for myrtle wax, as the following table shows :—

	Berry Wax.	Myrtle Wax.†
Sp. gr. at 15° C.	1·007	{ ·995 (Allen) ·875 (Allen)
Solidifying point.....	39°–40° C.	39°–43° C. (Allen)
Melting point	41°–45° C.	40°–44° C. (Allen)
Saponification value (Mgms. Caustic)	214·6	{ 205·7 (Allen)
Potash)		{ 211·7 (Allen)
Iodine value, per cent.	Nil	10·7‡ (Mills)

* Dr. J. Lewkowitsch, "Chemical Analysis of Oils, Fats, Waxes, &c.," 1898, p. 542.

† Dr. J. Lewkowitsch, "Chem. Anal. of Oils, &c.," p. 543.

‡ Calculated from bromine value, 6·34.

The only important point of difference to be noted in the above table is in regard to the iodine value, which by Hübl's method I found to be nil in the case of berry wax, indicating the absence of unsaturated acids, including, of course, oleic acid. It appears possible that Lewkowitsch bases his statement regarding the presence of oleic acid on an iodine value calculated from a bromine value, and not on an iodine value directly determined, which alone would be conclusive evidence.

The absence of unsaturated acids in berry wax no doubt accounts for the stability of this fat at comparatively high temperatures. I have for some years found it an excellent material for use in the oil bath. Even after repeated heating the bath compares very favourably with, for instance, melted paraffin wax, giving off very little odour or obnoxious vapour, even at 300° C., and having a very high flashpoint.

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